

REMARKS

Claims 1 through 10 are currently pending in the application.

This amendment is accompanied by a Request for Continued Examination (RCE) and is filed in response to the Advisory Action mailed September 6, 2005, and the Final Office Action of June 1, 2005.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on Desai et al. (U.S. Patent 6,166,434) in combination with Block et al. (U.S. Patent 5,137,959)

Claims 1, 3, 4, 6, 8 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Desai et al. (U.S. Patent 6,166,434) in combination with Block et al. (U.S. Patent 5,137,959). Applicants respectfully traverse this rejection, as hereinafter set forth.

Applicants assert that to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the cited prior art reference must teach or suggest all of the claim limitations. Furthermore, the suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicants' disclosure.

Turning to the cited prior art, the Desai et al. reference teaches or suggests a die clip for use in a semiconductor flip chip package as a replacement for the combination of a heat spreader and stiffener. The die clip engages the die while leaving some space open around the perimeter to provide access to the die. An under fill material is dispensed into the gap between the die and the substrate through an opening in the die clip.

The Block et al. reference teaches or suggests the use of alumina platelets used as thermally conductive, insulating filler in thermally conductive, insulating elastomers.

Applicants assert that any combination of the Desai et al. reference and the Block et al. reference does not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 because any combination of such cited prior art, at the least, fails to teach or suggest all of the claim

limitations of the inventions of independent claims 1, 4, 6, and 9. Applicants assert that any combination of the Desai et al. reference and the Block et al. reference does not teach or suggest the claim limitations of the inventions of independent claims 1, 4, 6, and 9 calling for “a heat sink cap having a portion thereof contacting a portion of the substrate covering the gel elastomer, the semiconductor die, and the plurality of solder balls, the heat sink cap having the edge portion thereof substantially contacting the substrate, the heat sink cap contacting at least a portion of the gel elastomer”, “a heat sink cap having the edge portion thereof substantially contacting the substrate and a portion of the gel elastomer, the heat sink cap covering the gel elastomer, the semiconductor die, the plurality of solder balls, and the portion of the substrate located thereunder”, “a heat sink cap having the edge thereof substantially contacting the substrate covering the compliant adhesive, a thermally conductive material filling the gel elastomer, the semiconductor die, the plurality of solder balls, and a portion of the substrate, and the heat sink cap contacting at least a portion of the gel elastomer”, and “a heat sink cap having an edge thereof substantially contacting the substrate and a portion of the compliant adhesive, a thermally conductive material substantially filling the gel elastomer, the heat sink cap covering the compliant adhesive, the gel elastomer, the semiconductor die, the plurality of solder balls, and at least a portion of the substrate”. Applicants assert that the Desai et al. die clip does not contact a portion of the substrate as a gap is located between the die clip and the substrate to allow for the dispensing of underfill into the die clip.

Accordingly, presently amended independent claims 1, 4, 6, and 9 are allowable as well as dependent claims 2, 3, 5, 7, and 8 therefrom.

Obviousness Rejection Based on Desai et al. (U.S. Patent 6,166,434) and Block et al. (U.S. Patent 5,137,959) as applied to claims 1, 4, 6, and 9 and further in combination with Chia et al. (U.S. Patent 6,225,695)

Claims 2, 5, 7 and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Desai et al. (U.S. Patent 6,166,434) and Block et al. (U.S. Patent 5,137,959) as applied to claims 1, 4, 6, and 9 and further in combination with Chia et al. (U.S. Patent 6,225,695). Applicants respectfully traverse this rejection, as hereinafter set forth.

Applicants assert that dependent claims 2, 5, 7, and 10 are allowable as they depend from allowable presently amended independent claims 1, 4, 6, and 9.

Applicants request entry of this amendment for the following reasons:

The amendment is timely filed.

The amendment does not require any further search or consideration.

The amendment places the application in condition for allowance.

Applicants submit that claims 1 through 10 are clearly allowable over the cited prior art.

Applicants request the allowance of claims 1 through 10 and the case passed for issue.

Respectfully submitted,



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